REMARKS

Claims 1 and 3 are pending in this application. Claims 1 and 3 have been amended. Claim 2 has been cancelled. No new claims have been added.

Claims 1-3 stand rejected under 35 USC §103(a) as unpatentable over **Burri** (previously applied) in view of U.S. Patent 3,831,072 to Tanikoshi (hereinafter "**Tanikoshi**").

Applicant respectfully traverses this verication.

As noted in Applicant's previous response, **Burri** discloses a stepper motor 10 including a six pole pair rotor 11 rotatable about an output shaft 12 acting as the rotor axis. A stator ring 14 of the motor 10 carries a four phase winding made up of windings 15 and 16. The motor is controlled by a stepper motor controller 17 which generates currents at its outputs 18 and 19, 181 and 191 in response to a pulse train 101 received at its input 102. Outputs 18 and 19 are respectively connected to stator windings 15 and 16 so that the currents generated excite the coils to drive the motor 10 in response to the input 101. Power is supplied to the arrangement by power supply connection 100 of controller 17. The rotation of the motor 11 is limited by a wiper 103, which is rigidly connected to output shaft 12, impinging upon an end stop 104.

The Examiner has admitted that **Burri** fails to disclose a "detecting coil provided separately from the exciting coils so as to generate induction voltage according to rotation of the rotor", as recited in claims 1 and 3 of the instant application, but has cited **Tanikoshi** for teaching this feature.

Tanikoshi discloses a DC motor with Hall generator. Fig. 2 shows four stator windings L1'-L4' which are star-connected and are spaced 90° apart. Column 6, lines 3-7 disclose:

> ... a coil 21 for detecting the rotation speed of the rotor is mounted on each of the windings L1'-L4' and connected through a matching circuit 22 such as an impedance element to the output terminals A and B of the bridge circuit.

This is in contrast to the present invention, as recited in claim 2, which recites "wherein the exciting coils are provided along a peripheral surface of the rotor, and the detecting coil is provided at a center of a longest peripheral surface between adjoining exciting coils".

Accordingly, claim 2 has been cancelled and its recitations added to claims 1 and 3.

In view of the aforementioned amendments and accompanying remarks, claims 1and 3, as amended, are in condition for allowance, which action, at an early date, is requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**".

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 01-2340.

Respectfully Submitted,

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Enclosures: Version with markings to show changes made

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VERSION WITH MARKINGS TO SHOW CHANGES MADE 09/826,359

IN THE CLAIMS:

Amend claims 1 and 3 as follows:

1. (Twice Amended) A stepping motor, comprising:

exciting coils;

a rotor provided with a plurality of N/S poles so as to rotate following a change of an excitation state of the exciting coils; and

a detecting coil provided separately from the exciting coils so as to generate an induction voltage according to rotation of the rotor,

wherein the exciting coils are provided along a peripheral surface of the rotor, and the detecting coil is provided at a center of a longest peripheral surface between adjoining exciting coils.

3. (Twice Amended) A driving apparatus, comprising:

a stepping motor having:

exciting coils;

a rotor providing with a plurality of N/S poles so as to rotate following a change of an excitation state of the exciting coils; and

a detecting coil provided separately from the exciting coils so as to generate induction voltage according to rotation of the rotor;

a driven member linked with the rotor;

a stopper for mechanically stopping the driven member at a predetermined position;

a first exciting means to normally or reversely rotate the rotor by controlling the excitation state of the exciting coils;

a second exciting means for reversing the rotor in a direction of making the driven member move toward the predetermined position by controlling the excitation state of the exciting coils;

a position detecting means for detecting the driven member having abutted the stopper and stopped at the predetermined position on a basis of induction voltage generated in the detecting coil during control by the second exciting means; and

a controlling means for stopping the first exciting means controlling and starting the second exciting means controlling when an instruction signal is inputted, and for starting the first exciting means controlling and stopping the second exciting means controlling when the position detecting means detects the driven member having stopped at the predetermined position,

wherein the exciting coils are provided along a peripheral surface of the rotor, and the detecting coil is provided at a center of a longest peripheral surface between adjoining exciting coils.